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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/630,222	07/30/2003	Fumio Takagi	9319K-000537	8302
27572	7590	12/06/2004	EXAMINER	
HARNESS, DICKEY & PIERCE, P.L.C.			HSIEH, SHIH WEN	
P.O. BOX 828			ART UNIT	
BLOOMFIELD HILLS, MI 48303			PAPER NUMBER	
			2861	

DATE MAILED: 12/06/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 10/630,222	Applicant(s) TAKAGI ET AL.	
	Examiner Shih-wen Hsieh	Art Unit 2861	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 30 July 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-17 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-17 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 30 July 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f):
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date <u>7-30-03</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Priority

1. Receipt is acknowledged of papers submitted under 35 U.S.C. 119(a)-(d), which papers have been placed of record in the file.

Specification

2. The disclosure is objected to because of the following informalities:
 - . Please label 31a and 31b described in [0053] in proper drawings.
 - . Please label 110 in fig. 6, refer to line 1 of [0077] in the specification.

Claim Objections

3. Claims 1-6, 11 and 13 are objected to because of the following informalities:

In regard to:

Claims 1-5 and 11:

Generally, a method claim requires a transitional phrase "comprising the steps of" in the preamble, and then followed by steps, such as: performing a capping operation; moving a capping device toward a print head, etc. so as to present a clearly

step-by-step method in the claim. Above method claims are presented in an apparatus format. Appropriate correction is required.

Claim 6:

Line 5, please change "the front surface" into "a front surface" so as to correct a minor lack of antecedent basis problem.

Claim 13:

Line 8, please change "the housing position" into "a housing position" to correct a minor lack of antecedent basis problem.

Claim Rejections - 35 USC § 112

4. Claims 13-17 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 13 recites "a table for mounting a micro-array substrate" is unclear. Because Examiner found in at least 7 places in the specification with the term "table (103)", which is used to mount the a micro-array substrate and without further mentioning/explaining what is the purpose or usage of this table with the rest of the components shown in fig. 5. In another words, this subject matter (table) loses connectivity with the rest of the components in the system as shown in fig. 6. Or one of ordinary skill in the art is unable to decide what is the role this table will play in this claim after read the specification. Although the table is for mounting the micro-array substrate

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as the claim recited, however, what is this micro-array substrate got to do with the rest of the component? For instance, the carriage, the cartridge, the suction means, etc. are essential subject matters in this claim, and their usage/purpose are widely understood.

Then what is the usage/purpose of this table mounting with micro-array substrate?

Since Examiner is unable to figure out the role of this table in this claim, therefore, Examiner is unable to decide whether it is a distinct feature or irrelevant to the claim.

Please explain.

Claim 13-17 has no art rejection in this office action, since the nature of the table recited in claim 13 is not clear so far.

Claim Rejections - 35 USC § 103

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to

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consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

6. Claims 1-12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hermanson (US Pat. No. 5,572,243).

In regard to:

Claim 6:

Hermanson teaches:

An inkjet printing apparatus including a tank for supplying a liquid to be ejected to an inkjet head of the printing apparatus, comprising:

a suction means (12, figs. 1 and 2) to be pressed against a nozzle opening surface (26, fig. 2) so as to be brought into close contact with it, including a suction cap with a gas-permeable filter (22, figs. 2-6) provided at the front surface thereof and a pump (18, fig. 1) connected to the suction cap, refer to col. 4, lines 20-35; 43-53; 56-61.

The device of Hermanson DIFFERS from claim 6 in that it does not specifically teach a gas-permeable filter in a front surface of the suction cap.

As it is clearly understood to a skilled one in the art that the term "gas-permeable filter" is merely a device that allows air/gas to pass just as the term itself suggested. On the basis of that, Hermanson's priming element (22) is disposed at a front surface of the cap (12), this priming element is also be able to draw air through it by the action of the suction pump (18), refer to col. 4, lines 50-51.

Therefore it would have been obvious to a person having ordinary skill in the art to know that the priming element taught by Hermanson is equivalent to the gas-permeable filter in the instant application with the difference only in the nomenclature, and also they both function the same.

Claim 7:

Hermanson further teaches:

wherein the gas-permeable filter allows a gas to pass through, but not a liquid to pass through under a pressure below a certain level, refer to col. 4, lines 47-51.

Hermanson does not specifically teach the liquid can pass through until a certain pressure is reached.

From the column and lines quoted above, when the ink can pass through the priming element, it would have been an obvious matter that a certain pressure level generated by the suction pump (18) should have been applied to the cap (12).

Claim 8:

The device of Hermanson DIFFERS from claim 8 in that it does not teach:

wherein the gas-permeable filter is made of fine polytetrafluoroethylene fibers having a mean pore diameter of 1 to 3 micron.

Therefore it would have been obvious to a person having ordinary skill in the art at the time the invention was made to select a known material available to the general public, since it has been held to be within the general skill of a worker in the art to select a known material on the basis of its suitability for the intended use, refer to MPEP 2144.07, and also it would have been obvious to a person having ordinary skill in the art

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at the time the invention was made to select a property of the material such as the pore size of the material, if the material being chosen for the priming element/gas-permeable filter is made of porous material, since it has also been held that choosing a property of a material such as a range of the pore size of 1-3 micron, involves only routine skill in the art, refer to MPEP 2144.05 II A.

Claim 9:

The inkjet printing apparatus claimed in Claim 6, wherein a unit provided with the suction means, or the suction cap is capable of being raised or lowered in a non-ejection region outside a printing region.

Rejection:

Hermanson teaches in his col. 4, lines 29-35 that the capping member (12) is able to move toward the print head (2) so as to cover the head (2), such movement is obviously achieved by a device or the unit as recited in this claim with the point that such device was not explicitly mentioned. However, such device was well-known in the art, it can be implemented either by a motor or by a mechanical linkage coupled to a driving source in the ink jet printer, refer to MPEP 2144.03, In re Malcolm, 129 F.2d 529, 54 USPQ 235 (CCPA 1942).

As to the unit is capable of being raised or lowered in a non-ejection region outside a printing region, Hermanson's capping device and its associated moving means (not explicitly disclosed) are disposed outside the printing region, refer to fig. 1. The raised or lowered actions of the unit are just based on the orientation of the print

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head. If the configuration as shown in fig. 1 rotates 90 degrees counter-clockwise, then the device/unit, which moves toward the head is a raised or lowered direction.

Claim 10:

Hermanson further teaches:

wherein the gas-permeable filter is brought into close contact with entire nozzle opening surfaces of all nozzles of the inkjet heads so as to cover all of them, refer to col. 4, lines 29-35.

Claim 12:

Hermanson further teaches:

An apparatus for manufacturing a micro-array by an ink-jet method, which is an ink-jet printing apparatus claimed in Claim 6.

Rejection:

Hermanson teaches an ink jet printer, refer to the title. For micro array, please refer to fig. 2 numeral (24) and col. 4, lines 36-42.

Claims 1-5 and 11:

Claim 1:

A method of filling an ink-jet head of an ink-jet printing apparatus with a liquid stored in a tank, wherein a suction cap is brought into close contact with a nozzle opening surface of the inkjet head with intervention of a gas-permeable filter and air within the suction cap is suctioned with a pump so as to fill the whole of the nozzle up to the tip thereof (claim 1).

Claim 2:

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The method of filling an inkjet head with a liquid claimed in claim 1, wherein the gas-permeable filter allows a gas to pass through while it does not allow a liquid to pass through under a pressure below a certain level.

Claim 3:

The method of filling an inkjet head with a liquid claimed in claim 2, wherein the gas-permeable filter is made of fine polytetrafluoroethylene fibers having a mean pore diameter of 1 to 3 micron.

Claim 4:

The method of filling an inkjet head with a liquid claimed in Claim 1, wherein the filling with the liquid is performed after the inkjet head has been moved to a non-ejection region outside a printing region of the inkjet printing apparatus.

Claim 5:

The method of filling an inkjet heads with liquids, using the method claimed in Claim 1, wherein the gas-permeable filter is brought into close contact with entire nozzle opening surfaces of all nozzles of the inkjet heads so as to cover all of them, and the air within the suction cap is suctioned.

Claim 11:

A method of filling an ejection head constituting an apparatus for manufacturing a micro-array by a ink-jet method, wherein the ejection head is filled with a liquid stored in a tank by using the method of filling an ink-jet head with a liquid claimed in claim 1.

Rejection:

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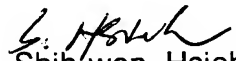
These claims correspond to claims 6-10 and 12 and are rejected on the basis as set forth for those claim discussed above.

7. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Shih-wen Hsieh whose telephone number is 571-272-2256. The examiner can normally be reached on 7:30AM -5:00PM.

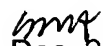
If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, S D Meier can be reached on 571-272-2149. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

SHIH-WEN HSIEH
PRIMARY EXAMINER


Shih-wen Hsieh
Primary Examiner
Art Unit 2861

SWH


Dec. 2, 2004